

# UNITED STATES PATENT OFFICE.

CARLETON ELLIS, OF LARCHMONT, NEW YORK, ASSIGNOR TO CHADELOID CHEMICAL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

## PAINT AND VARNISH REMOVER.

1,143,111.

Specification of Letters Patent. Patented June 15, 1915.

No Drawing. Original application filed February 26, 1907, Serial No. 359,509. Divided and this application filed August 6, 1907. Serial No. 387,273.

*To all whom it may concern:*

Be it known that I, CARLETON ELLIS, a citizen of the United States, and a resident of Larchmont, Westchester county, State of New York, have invented a new and useful Improvement in Paint and Varnish Removers, of which the following is a specification, this being a divisional application based on the disclosure of my application Serial No. 359,509, filed February 26, 1907, which discloses and claims the invention more broadly than this case which is limited to removers comprising butyric acid in connection with various other components.

My invention relates to paint and varnish removers of an acid character and especially to those containing a volatile instead of a non-volatile acid so that when the coating of paint or varnish has been removed any acid remaining on the treated surface may quickly evaporate and leave the same in a fit condition for the application of a new finish coating.

My invention is designed to provide an especially efficient remover for coatings containing readily decomposable paint pigments, such as the carbonates, among which white lead is the most noteworthy example. When my remover is applied to such coatings the pigments are immediately attacked by the acid and rapidly disintegrated under the influence of the chemical action. In the case of carbonates this action is especially effective owing to the simultaneous mechanical disintegration of the paint or varnish coating due to the evolution and escape of carbon dioxide. The evolution of gas also increases the efficiency of the neutral volatile solvents present to a marked degree as the latter are subjected to a continual agitation thereby, resulting in submitting the surface under treatment to all parts of the body of solvents alike.

For the purposes of this invention I prefer to use butyric acid. By the term butyric I wish it to be understood that I mean either normal butyric or isobutyric acid or a mixture of the two. This may be mixed with benzol or one or more substances allied thereto in their solvent properties such as the benzol homologues, including toluol, xylol and cumene; the petroleum hydrocarbons, such as benzin and kerosene; the chlorinated hydrocarbons, such as carbon tetra-

chlorid and chlorbenzol; the simple ethers such as methyl, ethyl and amyl ethers, and compound ethers such as methyl, ethyl and amyl acetates; and carbon disulfid. Ethyl alcohol or one or more substances having similar solvent properties may also be added, such as methyl, amyl and denatured alcohols; the ketones, as acetone, methyl acetone, which as is well known contains methyl alcohol, acetone and other ketonic solvents, methyl ethyl ketone, acetone oil, butyrene and pinacolin; and light oil of hard wood tar. I preferably add a thickener of some kind to this mixture to retard the evaporation of the solvents, although I do not consider this essential. Among such substances that are useful in this connection may be mentioned wood flour, starch, whiting, infusorial earth, the soaps, the waxes and nitrocellulose. These thickeners when added are incorporated during agitation so as to secure as homogeneous a mixture as possible. Those thickeners which are soluble in one or more of the solvents are first incorporated in the solvents which dissolve them most readily.

An illustrative remover of this kind adapted for application in a thin layer to the surface being treated is: methyl acetone, 30 parts; benzol, 25 parts; butyric acid, 4 parts, and ceresin wax, 1 part.

For "dipping" or "tank work" a remover of this character might be used with advantage: denatured alcohol, 40 parts; methyl ethyl ketone, 25 parts; butyric acid, 6 parts, and ceresin wax,  $\frac{1}{4}$  part.

The stiffening material may be omitted altogether from this composition if desired.

Other solvents from the preceding lists, such as suitable proportions of one or more chlorinated solvents, alcohols, ethers, esters, ketones or tar oils mentioned, might, of course, be added to or substituted in the above compositions. In some of these mixtures reaction probably takes place between the butyric acid and one or more of the other ingredients, though exactly what the reaction may be in each case is not certain.

What I wish to claim and cover by Letters Patent is:

1. The finish remover consisting substantially of remover comprising approximately

methyl acetone thirty parts, benzol twenty-five parts, butyric acid four parts and ceresin wax one part.

5 2. The finish remover comprising approximately ketonic and alcoholic solvents thirty parts, aromatic hydrocarbon solvent twenty-five parts, butyric acid four parts, and stiffening material.

10 3. The finish remover comprising ketonic finish solvent material, alcoholic finish solvent material, butyric acid and incorporated stiffening material.

15 4. The finish remover comprising methyl acetone, aromatic finish solvent material, butyric acid and waxy stiffening material.

5. The finish remover comprising methyl acetone, butyric acid and stiffening material.

6. The finish remover consisting substantially of methyl acetone thirty parts, benzol twenty-five parts, butyric acid four 20 parts and incorporated stiffening material.

7. The finish remover comprising large proportions of composite volatile finish softening material, a few per cent. at least of butyric acid and incorporated thickening 25 material.

In testimony whereof I have hereunto signed my name in the presence of two witnesses.

CARLETON ELLIS.

Witnesses:

SAMUEL R. BELL,  
HARRY W. BROWN.